

Claims

1. A sampling and assay device comprising:
a chamber assembly defining at least three chambers arranged in a row, adjacent
5 chambers along the row being separated by respective partitions, wherein at least one of
the chambers is capable of receiving a sample and at least a further two of the chambers
contain reagent; and
a rupture arrangement capable of rupturing all the partitions simultaneously.
- 10 2. A sampling and assay device comprising at least three chamber portions
connected together in a row and each defining a chamber, adjacent chambers along the
row being separated by respective partitions, at least one of the chambers being capable
of receiving a sample and at least a further two of the chambers containing reagent,
wherein adjacent chamber portions along the row are relatively movable towards
15 each another and, in respect of each pair of adjacent chamber portions, one of the
adjacent chamber portions has the respective partition fixed thereto and the other of the
adjacent chamber portions has a rupture member arranged to rupture the respective
partition on relative movement of the adjacent chamber portions, whereby the sampling
and assay device is capable of rupturing all the partitions simultaneously on relative
20 movement of the chamber portions at the ends of the row towards each other.
3. A sampling and assay device according to claim 2, wherein each pair of adjacent
chamber portions have respective connection portions mated together.
- 25 4. A sampling and assay device according to claim 3, wherein, in respect of at least
one pair of adjacent chamber portions, a first one of the chamber portions has a female
connection portion and the other, second one of the chamber portions has a male
connection portion mated with said female connection portion, said partition being fixed

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on said first chamber portion across the aperture in said female connection portion and said rupture member being formed by an edge of said male connection portion facing the partition.

- 5 5. A sampling and assay device according to claim 4, wherein said first one of the chamber portions comprises:

an annular body defining the chamber and having an opening at one end at least;
and

- 10 a cap comprising an annular wall fitted in said opening of the annular body, the annular wall being said female connection portion.

6. A sampling and assay device according to claim 5, wherein said first one of the chamber portions is an intermediate chamber portion arranged intermediate two end chamber portions in said row, and the annular body of said first one of the chamber portions has protruding therefrom a male connection portion connected to a female connection portion of a further, adjacent chamber portion.
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7. A sampling and assay device according to claim 6, wherein the male connection portion of said first one of the chamber portions is identical to the male connection portion of said further, adjacent chamber portion.
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8. A sampling and assay device according to any one of claims 3 to 7, wherein an intermediate chamber portion intermediate other chamber portions in said row has first and second connection portions, the second connection portion being capable of being mated to the first connection portion of a notional chamber portion having an identical construction to the said intermediate chamber portion, whereby the sampling and assay device is capable of having further chamber portions identical to the said intermediate chamber portion connected into said row.
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9. A sampling and assay device according to any one of claims 2 to 8, further comprising a barrier element extending across the chamber of the one of the adjacent chamber portions which has the partition fixed thereto to prevent passage of the ruptured partition.
- 5 10. A sampling and assay device according to any one of claims 2 to 9, further comprising a removable blocking element arranged between a pair of adjacent chamber portions to prevent relative movement between the pair of adjacent chamber portions.
- 10 11. A sampling and assay device according to claim 10, wherein a further chamber portion adjacent the pair of adjacent chamber portions has a member engaging the removable blocking element to prevent relative movement between the pair of adjacent chamber portions and the further chamber portion.
- 15 12. A sampling and assay device according to any one of claims 2 to 9, further comprising a removable blocking element arranged to prevent relative movement of a pair of adjacent chamber portions and a further chamber portion adjacent the pair of adjacent chamber portions.
- 20 13. A sampling and assay device according to any one of claims 10 to 12, wherein the removable blocking element is formed integrally with one of the chamber portions and is detachable therefrom.
14. A sampling and assay device according to any one of claims 10 to 13, wherein
25 the removable blocking element is arranged at the end of a female connection portion of one of the pair of chamber portions which is mated with a male connection portion of the other of the pair of chamber portions.

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15. A sampling and assay device according to any one of claims 2 to 14, wherein the chamber portion at one end of the row is a tubular body having an open end distal from the adjacent chamber portion in the row for insertion of a swab for carrying a sample.

5 16. A sampling and assay device according to claim 15, wherein the chamber portion adjacent the tubular body has a partition fixed thereto and tubular body has a rupture member at the end proximate to the adjacent chamber portion in the row.

10 17. A sampling and assay device according to claim 16, wherein the rupture member is a wall extending around an aperture capable of having a swab inserted therethrough.

18. A sampling and assay device according to claim 16 or 17, wherein the chamber portion adjacent the tubular body has an annular portion forming a male connection portion, and
15 the tubular body has at the end proximate to the adjacent chamber portion in the row an annular skirt forming a female connection portion mated with said male connection portion.

19. A sampling and assay device according to any one of claims 15 to 18, further
20 comprising a swab for carrying a sample mounted to a holder having a releasable engagement portion arranged, on insertion of the swab into the open end of the tubular body, to engage the tubular body with the swab held outside the chamber of the chamber portion adjacent the tubular body and, on release, to allow insertion of the swab into the chamber of the chamber portion adjacent the tubular body

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20. A sampling and assay device according to claim 19, wherein the releasable engagement portion comprises a catch arranged to engage the open end of the tubular body and being deflectable to release the open end of the tubular body.

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21. A sampling and assay device according to any one of claims 2 to 14, wherein the chamber portion at one end of the row has a stopper which is removable to allow entry of a sample to the chamber.
- 5 22. A sampling and assay device according to any one of claims 2 to 21, wherein the chamber which is capable of receiving a sample contains a buffer.
23. A sampling and assay device according to any one of claims 2 to 22, wherein at least one of the end chamber portions at the end of the row is optically transparent in at
10 least a part thereof for inspection of the contents.
24. A sampling and assay device according to any one of claims 2 to 23, wherein the gap between each partition and its respective rupture member is at most 3mm.
- 15 25. A kit comprising at least three chamber portions capable of being assembled into a sampling and assay device according to any one of claims 2 to 24.
25. A sampling and assay device including at least three chamber portions and connected together in a row, each chamber portion defining a chamber, adjacent
20 chambers along the row being separated by respective puncturable partitions,
wherein each pair of adjacent chamber portions have respective connection portions mated together,
an intermediate chamber portion intermediate other chamber portions in said row has first and second connection portions, the second connection portion being
25 capable of being mated to the first connection portion of a notional chamber portion having an identical construction to the said intermediate chamber portion, whereby the sampling and assay device is capable of having further chamber portions identical to the said intermediate chamber portion connected into said row.

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26. A system for assembling sampling and assay devices having a plurality of chambers arranged in a row, the system comprising:

at least one type of end chamber portion defining a chamber and having a connection portion;

5 at least one type of intermediate chamber portion defining a chamber and having two connection portions,

wherein the connection portions of the types of end chamber portion and intermediate chamber portion are capable of being mated together to assemble a sampling and assay device with an end chamber portion, at least one intermediate
10 chamber portion and a further end chamber portion connected in a row.

27. A system according to claim 26, wherein the system includes a type of intermediate chamber portion each have a first and second connection portions, the first connection portion of one intermediate chamber portion being capable of being mated to
15 the second connection portion of another intermediate chamber portion.